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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,830	08/26/2002	Crisanto Gutierrez-Armenta	BTGI-0025	2262
34141	7590	12/29/2005	EXAMINER	
COZEN O' CONNOR, P.C. 1900 MARKET STREET PHILADELPHIA, PA 19103-3508			COLLINS, CYNTHIA E	
			ART UNIT	PAPER NUMBER

1638

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/088,830	Applicant(s) GUTIERREZ-ARMENTA ET AL.	
	Examiner Cynthia Collins	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 12-24 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-6, 12-24 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment filed September 14, 2005 has been entered.

Claims 4, 7-11 and 25-46 are cancelled.

Claims 1, 5, 6, 12, 22, 23 and 47 are currently amended.

Claims 1-3, 5-6, 12-24 and 47 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All previous objections and rejections not set forth below have been withdrawn.

Claim Rejections - 35 USC § 112

Claims 1-3, 5-6, 12-13, 15, 22-24 and 47 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant points out that the claims have been amended to recite the protein or peptide comprises one or more of the following structural features common to DP proteins and set forth in the specification: a) the DNA binding domain, b) the heterodimerization domain, and c) the

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nuclear localization signal. Applicant maintains that a sufficient written description is thus provided as the claims recite a proper combination of structure and function. (reply pages 12-13)

Applicant's arguments are unconvincing. Recitation of structure and function in the claims does not describe the claimed invention because the recited genus has not been described. In the instant case Applicant has not described a representative number of species falling within the scope of the claimed genus which encompasses DNA sequences that encode functional fragments of SEQ ID NO:2, and DNA sequences that encode variants of SEQ ID NO:2 that have at least 50 or 70% identity to SEQ ID NO:2, as Applicant has described only a single a 1089 bp DNA sequence of SEQ ID NO:1 obtained from *Triticum monococcum* that encodes a 261 amino acid sequence of SEQ ID NO:2 that exhibits homology to the DP family of proteins.

Claim 14 remains rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the rejection should be withdrawn as pCLON33 has been deposited under the Budapest Treaty as set forth on page 12 of the specification. Applicant also maintains that there is no reasonable basis for demanding an additional affidavit or declaration regarding this deposit. (reply page 14)

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Applicant's arguments are unconvincing. The mere deposit of pCLON33 under the Budapest Treaty does not enable the claimed invention. Further, the basis for demanding an affidavit or declaration by the applicants, or a statement by an attorney of record over his or her signature and registration number, stating that the plasmid pCLON33 will be irrevocably and without restriction released to the public upon the issuance of a patent can be found in 37 CFR 1.808 (a)(2).

Claims 1-3, 5-6, 12-13, 15-24 and 47 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant points out that the claims have been amended to recite the protein or peptide comprises one or more of the following structural features common to DP proteins and set forth in the specification: a) the DNA binding domain, b) the heterodimerization domain, and c) the nuclear localization signal. Applicant maintains that the techniques required to synthesize, clone and express DNA sequences are well known to and within the abilities of those skilled in the art, and points out that the specification also teaches methods of verifying the activity of the proteins expressed, such that the amount of experimentation required to practice the claimed invention would not be undue (reply pages 14-15).

Applicant's arguments are unconvincing. The outstanding rejection was not predicated on a failure to provide guidance with respect to the general practice of techniques that are known to and/or within the abilities of those skilled in the art. The outstanding rejection was predicated in part on a failure to provide guidance with respect to the specific practice of such techniques, i.e. with respect to which sequences to make and test, and with respect to which functional assays to apply to which sequences, in order to discriminate between those sequences that function as desired and those that do not. Absent such guidance, one skilled in the art would have to isolate from undisclosed sources and/or synthesize each of the myriad sequences encompassed by the claims and then determine the specific function of each in order to discriminate between those sequences that function as desired and those that do not. Such a trial and error approach to practicing the claimed invention would constitute undue experimentation.

Applicant also argues that the variability of function observed for DP proteins in nonplant cells as set forth in Hiebert S. W. et al., Dynlacht B.D. et al., Sawado T et al. and Wu CL et al. is irrelevant to determining whether undue experimentation is required to carry out the claimed method in plant cells. (reply page 15)

Applicant's arguments are unconvincing. The variability of function observed for different types of nonplant DP proteins in nonplant cells is relevant to determining whether undue experimentation is required to carry out the claimed method in plant cells, because both the cell cycle and the proteins whose activity is required for its progression are conserved across the eukaryotic kingdoms, and because variability of structure and function have also been observed for different types of plant DP proteins.

Applicant additionally argues that Magyar Z. et al. and Mariconti L. et al. do not teach or suggest that Applicant's claimed invention does not work or would require undue experimentation, as Magyar Z. et al. and Mariconti L. et al. are directed to sequences encoding DP proteins obtained from *Arabidopsis thaliana*, and are silent with respect to Applicant's claimed invention which makes use of sequences encoding DP proteins obtained from wheat (reply pages 15-16).

Applicant's arguments are unconvincing. Neither Magyar Z. et al. nor Mariconti L. et al. were cited for any specific teachings with respect to the functionality of or use of wheat DP proteins. Both Magyar Z. et al. and Mariconti L. et al. were cited to support the general assertion that the effect of expressing in a cell a DP protein, alone or in combination with an E2F protein, is unpredictable, since different members of both the DP protein family and the E2F protein family vary with respect to their specific functions, and with respect to how they function when expressed independently and when coexpressed. Given that the effect of expressing in a cell a DP protein, alone or in combination with an E2F protein, is unpredictable, and given that the genus of sequences recited in the claims appear to encode polypeptides that belong to the DP family of proteins, the effect of expressing in a cell any member of the genus of sequences recited in the claims is also unpredictable. Furthermore, the rejected claims are not limited to the use of sequences encoding DP proteins obtained from wheat.

Applicant further argues that argues that Gillespie D. does not teach or suggest that Applicant's claimed invention does not work or would require undue experimentation, as the principals set forth in Gillespie D. were well known to those of skill in the art prior to

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Applicant's filing date, and the optimization of hybridization conditions was routinely practiced.
(reply pages 16-17)

Applicant's arguments are unconvincing. The outstanding rejection was not predicated on a failure to provide guidance with respect to the general practice of techniques that are known to and/or within the abilities of those skilled in the art. The outstanding rejection was predicated in part on a failure to provide guidance with respect to the specific practice of such techniques, i.e. with respect to which specific nucleotide sequences to use as DNA probes, the conditions for their use, and the specific targets that can be detected using these probes. Such guidance is necessary because the conditions for using a sequence as a probe are unpredictable as set forth in Gillespie D. Absent such guidance one skilled in the art would have to test each of the myriad sequences encompassed by the claims under a variety of different conditions in order to determine which probe sequences are useful for the detection of particular target sequences and which are not. Such a trial and error approach to practicing the claimed invention would constitute undue experimentation.

Applicant also argues that Sandler S.J. et al., van der Krol A.R. et al. and Waterhouse et al. do not teach or suggest that Applicant's claimed invention does not work or would require undue experimentation, as the principals set forth in Sandler S.J. et al., van der Krol A.R. et al. and Waterhouse et al. were well known to those of skill in the art prior to Applicant's filing date, and the general principals of antisense sequence construction and use in plants is broadly appreciated in the art. Applicant also points to Shewmaker C.K. et al. (US Patent No. 5,107,065,

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issued April 21, 1992) cited in the specification which teaches the general principals of the construction of antisense compounds (reply pages 17-18).

Applicant's arguments are unconvincing. The outstanding rejection was not predicated on a failure to provide guidance with respect to the general practice of techniques that are known to and/or within the abilities of those skilled in the art. The outstanding rejection was predicated in part on a failure to provide guidance with respect to the specific practice of such techniques, i.e. with respect to which nucleotide sequences to express in a plant as antisense transcripts, or how to express them such that plant growth, gene expression, DNA replication, cell cycle progression, differentiation and development could be controlled in a particular manner. Such guidance is necessary because methods for inhibiting the expression of endogenous genes using antisense technology are unpredictable as set forth in Sandler S.J. et al., van der Krol A.R. et al. and Waterhouse et al. Absent such guidance one skilled in the art would have to test each of the myriad sequences encompassed by the claims for its specific effect on plant growth, gene expression, DNA replication, cell cycle progression, differentiation and development in order to discriminate between those sequences that function as desired and those that do not. Such a trial and error approach to practicing the claimed invention would constitute undue experimentation. Furthermore, the disclosure of the general principals of the construction of antisense compounds by Shewmaker C.K. et al. does not provide guidance with respect to the specific practice of such techniques using the nucleotide sequences encompassed by the claims.

Claim 1 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "controlling", for the reasons of record set forth in the office action mailed March 15, 2005.

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Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the question of how these features are controlled is irrelevant, as persons of ordinary skill in the art would have no difficulty in determining whether plant growth, gene expression, cellular DNA replication, cell cycle progression and differentiation and development were controlled by carrying out the claimed method (reply pages 9-10).

Applicant's arguments are unconvincing. The question of the way in which the recited features are controlled is relevant. Persons of ordinary skill in the art would have difficulty in determining what subject matter is or is not within the scope of the claims because the recited characteristics may be controlled in many different ways, and the way in which the recited features are controlled cannot be discerned from the elements recited in the claims. Accordingly persons of ordinary skill in the art would not know which aspect of plant growth, gene expression, cellular DNA replication, cell cycle progression or differentiation and development to evaluate in order to determine what subject matter is or is not within the scope of the claims.

Claim 1 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "increasing or decreasing", for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

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Claim 1 is indefinite in the recitation of “increasing or decreasing”. It is unclear how a single method could increase or decrease E2F-dimerization partner (DP) protein activity in a plant cell.

Applicant maintains that the phrase is as clear as can be, as one skilled in the art would be able to determine whether the activity increases or decreases (reply page 10).

Applicant’s arguments are unconvincing. The recitation of “increasing or decreasing” is indefinite in the context of the claim language because it is unclear how a single method could both increase or decrease E2F-dimerization partner (DP) protein activity in a plant cell, and there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite in the recitation of “increase or decrease”. It is unclear how a single method could both increase or decrease E2F activity in a plant cell, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite in the recitation of “the DNA binding domain”, “the

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heterodimerization domain” and “the nuclear localization signal”. There is insufficient antecedent basis for these limitations in the claim.

Claim 1 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “E2F-dimerization partner (DP) protein activity”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 do not specifically address this rejection of claim 12. Accordingly, the rejection is maintained.

Claim 5 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “the plant DP protein level”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that a plant's DP protein level is an inherent feature of the plant and that no antecedent basis is thus explicitly required (reply page 10).

The rejection is maintained, as neither claim 5 nor claim 1 from which claim 5 depends require the use of a plant. It is suggested that the claim be amended to recite “DP protein level” in order to overcome the rejection.

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Claim 5 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “altering”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant points out that the term altering has been amended where appropriate, and maintains that “alteration of the DP protein level” does not lack clarity as an alteration in the level of a protein can only be in the sense of increasing or decreasing (reply page 10).

The rejection is maintained as claim 5 still requires alteration of the plant DP protein level and E2F-DP transactivation properties. It is unclear in what way plant DP protein level and E2F-DP transactivation properties are altered, as plant DP protein level and E2F-DP transactivation properties may be altered in more than one way. Further, the phrase “alteration of the DP protein level” does lack clarity even though an alteration in the level of a protein can only be in the sense of increasing or decreasing, because neither claim 5 nor claim 1 from which it depends recites a specific method that would result in both an increase and a decrease in the level of plant DP protein when practiced.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite in the recitation of “modulation”. It is unclear in what way E2F-DP DNA-binding activity is modulated, as the binding of a protein to DNA may be modulated in

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more than one way, and the nature of the modulation cannot be discerned from the current claim language.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite in the recitation of “altering”. It is unclear in what way E2F-DP transactivation properties are altered, as transactivation properties may be altered in more than one way, and the nature of the alteration cannot be discerned from the current claim language.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite in the recitation of “increasing or decreasing”. It is unclear how a single method could both increase or decrease the binding of DP to E2F, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 6 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “modification” and “activity”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant points out that the claim has been amended to make clear that the modification relates to an increase or decrease in DP protein activity. Applicant also maintains that the phrase

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“modification of levels or activity of plant E2F and/or plant Rb” is not unclear, but is broadly drafted to include any modification of the levels or activity of plant E2F or plant Rb or plant Rb (reply page 11)

Applicant’s arguments are unpersuasive. The amendment of claim 6 to recite that “DP protein activity is increased or decreased” does not clarify in what way the level or activity of plant E2F and/or plant Rb is modified. Further, the phrase “modification of levels or activity of plant E2F and/or plant Rb” is unclear in the context of the current claim language. The drafting of the claim to include any modification of the levels or activity of plant E2F or plant Rb or plant Rb renders the claim indefinite because neither claim 6 nor claim 1 from which it depends recites a specific method that would result in any modification of the levels or activity of plant E2F or plant Rb or plant Rb when practiced.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is indefinite in the recitation of “increased or decreased”. It is unclear how a single method could both increase or decrease DP protein activity, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 12 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “ability to”, for the reasons of record set forth in the office action mailed March 15, 2005.

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Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the rejection should be withdrawn as the phrase has been removed (reply page 11).

The rejection is maintained as the claim continues to recite "ability to".

Claim 12 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of "modulate", for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 do not specifically address this rejection of claim 12. Accordingly, the rejection is maintained.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 is indefinite in the recitation of "increases or decreases". It is unclear how a single method could both increase or decrease E2F-dimerization partner (DP) activity, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 is indefinite in the recitation of "the DNA binding domain", "the

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heterodimerization domain” and “the nuclear localization signal”. There is insufficient antecedent basis for these limitations in the claim.

Claim 22 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “ability to”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the rejection should be withdrawn as the phrase has been removed (reply page 11).

The rejection is maintained as the claim continues to recite “ability to”.

Claim 22 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “modulate”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the phrase modulating encompasses both enhancing and diminishing binding, and that the invention provides a method which increases or decreases DP activity. (reply page 11)

The rejection is maintained as it remains unclear in what way E2F binding is modulated, as the binding of a protein to DNA may be modulated in more than one way, and the nature of

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the modulation cannot be discerned from the current claim language, as it is unclear how the method set forth in the claims could simultaneously both enhance and diminish binding, or simultaneously both increase and decrease DP activity.

Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 is indefinite in the recitation of “increases or decreases”. It is unclear how a single method could both increase or decrease E2F-dimerization partner (DP) activity, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 is indefinite in the recitation of “the DNA binding domain”, “the heterodimerization domain” and “the nuclear localization signal”. There is insufficient antecedent basis for these limitations in the claim.

Claim 47 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “modulate”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

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Applicant maintains that the rejection should be withdrawn as the phrase has been amended to “modulation of” (reply page 12).

The rejection is maintained as the amendment of the claim to recite “modulation of” does not clarify in what way E2F binding is modulated, as the binding of a protein to DNA may be modulated in more than one way, and the nature of the modulation cannot be discerned from the current claim language.

Claim 47 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite in the recitation of “or effect thereof”, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the rejection should be withdrawn as the phrase has been removed (reply page 12).

The rejection is maintained as the claim continues to recite “or effect thereof”.

Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 47 is indefinite in the recitation of “increases or decreases”. It is unclear how a single method could both increase or decrease E2F-dimerization partner (DP) activity, as there are insufficient elements recited in the claims to indicate that the claimed method would produce such a result.

Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 47 is indefinite in the recitation of “the DNA binding domain”, “the heterodimerization domain” and “the nuclear localization signal”. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 101 and 35 USC § 112

Claims 1-3, 5-6, 12-24 and 47 remain rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility, for the reasons of record set forth in the office action mailed March 15, 2005.

Claims 1-3, 5-6, 12-24 and 47 also remain rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention, for the reasons of record set forth in the office action mailed March 15, 2005.

Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant maintains that activity for the protein comprising SEQ ID NO:2 has been established through a combination of sequence similarity and functional evidence as presented in the application, for example in Examples 5, 6 and 7 and Figure 3. Applicant also maintains that specific, substantial and credible uses for the protein comprising SEQ ID NO:2 and plants having

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modified expression of DP proteins are supported by the teaching of Lowe K. et al., PCT publication WO 00/47614, published 17 August 2000. (reply pages 7-8).

The Examiner maintains that the combination of sequence similarity and functional evidence presented in the instant application does not establish a specific and substantial utility for the protein comprising SEQ ID NO:2. An alignment of partial sequences from SEQ ID NO:2 and a deduced amino acid sequence corresponding to an *Arabidopsis thaliana* genomic DNA sequence of previously unknown function (Figure 3) does not establish a utility that is both specific and substantial, as partial homology to a protein of unknown function does not impute functional characteristics to SEQ ID NO:2. The binding of the protein comprising SEQ ID NO:2 to an E2F transcription factor protein and its stimulation of E2F binding to DNA (Examples 5, 6 and 7) also does not establish a utility that is both specific and substantial, as it is not apparent how these properties of SEQ ID NO:2 have a real world use. Additionally, PCT publication WO 00/47614 does not establish a utility that is both specific and substantial for the protein comprising SEQ ID NO:2, as PCT publication WO 00/47614 does not teach or disclose the protein comprising SEQ ID NO:2, or polynucleotides that encode SEQ ID NO:2, or plants having modified expression of the protein comprising SEQ ID NO:2.

Claim Rejections - 35 USC § 102

Claims 17, 18, 19 and 20 remain rejected under 35 U.S.C. 102(b) as being anticipated by Gillaspay G.E et al., GenEmbl Accession No. U39059, 18 November 1996, for the reasons of record set forth in the office action mailed March 15, 2005.

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Applicant's arguments filed September 14, 2005 have been fully considered but they are not persuasive.

Applicant points out that a sequence alignment of the Gillaspy sequence and SEQ ID NO:1 shows only that the two sequences possess 52 contiguous adenosines in common in the poly A tail and 8 other bases in common. Applicant maintains that the Gillaspy sequence does not represent a nucleic acid probe because it has only limited GC content and does not appear likely to act as a probe at a reasonable stringency; nor would it represent a suitable primer because it does not appear likely to bind the target at temperatures normally used for specific amplification. Applicant also maintains that one skilled in the art would be very unlikely to select a probe that contains a sequence that is quite clearly not in any way specific to a particular sequence. (reply pages 8-9)

Applicant's arguments are unpersuasive. In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ability to hybridize to a specific target sequence under conditions of specified stringency) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Gillaspy G.E et al. anticipate the claimed invention because Gillaspy G.E et al. teach a DNA sequence consisting of 60 contiguous nucleotides of SEQ ID NO:1 that are not selected from nucleotides encoding amino acids 70 to 136. Accordingly the DNA sequence taught by Gillaspy G.E et al. comprises 10 or more contiguous nucleotides of SEQ ID NO:1 that are not selected from nucleotides encoding

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amino acids 70 to 136, at least 18 contiguous bases of SEQ ID NO:1, 30 to 100 contiguous bases of SEQ ID NO:1, and 10 to 20 contiguous bases of SEQ ID NO:1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (571) 272-0794. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cynthia Collins
Primary Examiner
Art Unit 1638

CC

A handwritten signature in black ink, appearing to read 'Cynthia Collins', written in a cursive style.

12/23/05